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Number of droughts likely to increase under climate change

26 May 2010

A Met Office study on how climate change could affect the frequency of extreme droughts in the UK has found a range of possibilities — the majority of them showing such droughts will become more common.

The study looked at how frequently extreme droughts could happen in the UK by 2100. To put the droughts in context, conditions seen in 1976 were used as a benchmark — a year which saw one of the worst droughts on record.

The Met Office climate model was used to run a number of simulations and these were then studied to determine how frequently 1976-style droughts could occur.

There were 11 slightly different versions of the model, producing a range of results. At the lower end, extreme droughts would continue to be as rare as they are today — happening every 50 to 100 years.

In the majority of other outcomes from the model, however, 1976-style droughts were more frequent. At the higher end, extreme droughts could happen once every decade — making them about 10 times more frequent than today.

This is an important step in assessing the likelihood of drought in the future, which could be vital for informing climate adaptation policy. At this stage, there is no probability attached to each of the scenarios, so they are all assumed to be equally likely. It is hoped future research will be able to assess how likely each outcome is to give better guidance to decision-makers on how they need to plan and adapt for future impacts of climate change.

Eleanor Burke, Climate Extremes Scientist with the Met Office, said understanding how droughts will affect the UK in the future is vital for plans to adapt to climate change.

She said: “Severe droughts such as the one seen in 1976 have a big impact — causing water shortages; health risks; fire hazards; crop failure, and subsidence. Understanding how the frequency of these events will change is therefore very important to planning for the future.”

1976 drought

- While it culminated in the summer of 1976, the drought was actually an 18-month period of below average rainfall starting in May 1975.
- Only half the normal rainfall fell between June and August in 1976.
- Temperatures were 4 °C above average between June and August across much of southern England.
- The bone dry conditions caused a major hazard, with fires breaking out on a daily basis. In Surrey, the fire service answered 11,000 fire related calls in five months.
- Agriculture suffered badly, with an estimated £500 million in failed crops.
- Dry ground saw a surge in subsidence claims on property, with costs amounting to around £60 million.
- Water became scarce — a Drought Act was passed and there was widespread water rationing.
- Some rivers, such as the Don and Sheaf in Sheffield, almost completely dried up.

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